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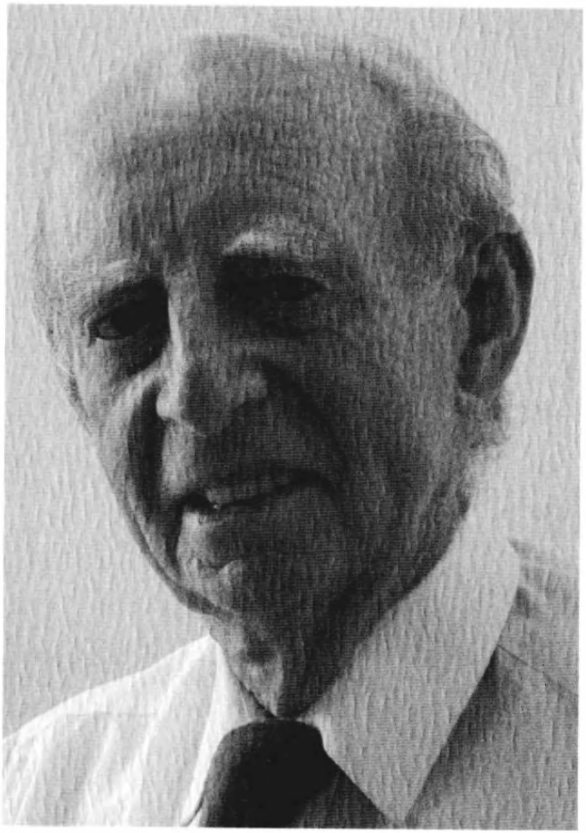

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THE COVER
The special cover of this issue is intended as a tribute from the Society to the late Doug Waterhouse, in recognition of the debt owed to him by the entomological scientists of Australia for his dynamic leadership and encouragement.

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Material for publication in the Novembert 2000 issue of *Myrmecia* will need to be in the hands of the Editor by **Friday 20 April 2001**. All material should arrive by e-mail to laurence@ento.csiro.au. If this is not possible, fax to 02 6246 4264.

EDITORIAL

With the passing of Doug Waterhouse, Australia has lost the last of the four great insect scientists who served this country so well through the twentieth century. W.W.Froggatt started the century with his extensive personal investigations into the life of Australian insects, and his writings remain a joy and a mine of information for anyone interested in the natural history of Australia. A.J.Nicholson was the first university lecturer in the subject, and his subsequent influence on ecology was outstanding. R.J.Tilyard set entomology on a professional basis in Australia, and through his major textbook as much as his organisational skills, prepared the way for the big expansion following the second world war and the arrival of DDT. But it was Waterhouse who was the giant of our profession for the second half of the Century.

Coming from a period when the practice of leading from the front was still considered laudable, and being himself confident of the benefits science could offer society, Doug created opportunities and led entomology into a range of new fields. Such things do not just happen. They require intellectual originality, determination, courage, and friends. Doug had all of these. One outcome was the creation of our Society itself, by entomologists who owed much to the scientific environment that Doug had helped to develop. With this in mind I asked several of our members who were associated with Doug in various capacities to write some lines about their interactions.

A gifted scientist and energetic iconoclast, he was not always easy to deal with, but his passing leaves our Society and our profession poorer. Remember, however, that above all, Doug was positive. I am sure that he would appreciate our mourning. But I am equally sure he would expect us to be finding ways of once again presenting to the taxpaying public and their politicians the fact that insects are the dominant life form on this planet, and that the further development of mankind depends, in part, on our understanding and manipulation of insect populations.

And that brings me to a question that has crossed my computer screen and dining table several times recently from a range of sources. Does anyone out there have any opinions on why the Australian

Entomological Society should continue to exist? I was faced with this recently when two young scientists asked me, quite independently of each other, why they should continue their membership. Both are publishing international class original work on Australian insects, but neither would consider themselves 'entomologists'. These two young people represent an increasing proportion of biologists for whom insects are the tool through which particular biological problems are examined. If we cannot make our Society relevant to them, can we expect to project the relevance of our science to the rest of society?

LAM

DOUGAS FREW WATERHOUSE

Doug Waterhouse died in Canberra on the first of December at the age of 84, having been Chief of CSIRO Entomology from 1960 until 1981. He was one of four sons who grew up on Sydney's North Shore suburb of Gordon. He started school at Turramurra College and completed his school years at Shore. Doug was surrounded by a family with strong interests in natural history. His father, Gowrie Waterhouse, taught modern languages at Sydney University and had an intense interest in native plants, but also became a renowned expert on camellias.

According to his mother, Doug's first contact with an insect began in the pram when only seven months old. His early interests were encouraged by his father's older brother, Gustavus Athol Waterhouse, who was devoted to the study of Australian butterflies, and lived nearby at Killara. From the age of 8, Doug collected butterflies with his uncle during weekends, often accompanied by his high school mate Max Day, who became Doug's life-long friend, colleague, and also a distinguished scientist with CSIRO. The G.A. Waterhouse collection with a few specimens contributed by Doug, became the Nation's first comprehensive collection of Australian butterflies at the Australian Museum, Sydney.

Doug's interests in entomology continued throughout his school and university years. He graduated with BSc first class honours in Zoology and Chemistry from Sydney University in 1937 and received a University Medal. He was awarded an MSc in1939 and a DSc in 1952. In 1938 Doug and Max were both offered permanent positions with the CSIR Division of Entomology, where Doug eventually became Chief, and Max later joined the CSIRO Executive and also Chief of the Division of Forest Research.

At the beginning of World War II, Doug was commissioned as Captain in the Australian Army Medical Corp to study vectors of tropical disease. He studied insect repellents, work that led to inclusion of the active ingredient dimethyl phthalate in *Aerogard*. This compound, nicknamed by troops as "Mary", became a saving grace for those serving in New Guinea, as it reduced the incidence of malaria by repelling mosquito vectors. In 1944 Doug married Allison Dawn Calthorpe who had been helping him with his blowfly and mosquito studies. After the War, he was awarded a one-year scholarship at Cambridge University in the Department of Zoology, where he worked on peritrophic membranes with the group led by V.B. Wigglesworth.

From 1949, Doug returned to the Division of Entomology to work on the physiology of insects particularly sheep blowflies, the insect gut and peritrophic membranes, including those of Lepidoptera and Diptera. He also worked on the physiology of clothes moths. He was an Assistant Chief, CSIRO Entomology from 1953 to 1959 and succeeded Dr A.J. Nicholson (1936-1960) as Chief in 1960. Until his retirement in 1981, Doug led teams of world class scientists, paving the way for new initiatives in insect systematics, ecology and the control of pests and weeds. In 1962 he established the Australian National Insect Collection, an internationally renowned Centre in the care of CSIRO. Doug supported both fundamental and applied research by the scientists in the Division. He encouraged collaboration between Australian and overseas scientists and was acutely aware of insect problems of agriculture in the disadvantaged developing nations. In 1970, the first edition of *The Insects of Australia*, a major multi-authored text, was published after one of Doug's long term wishes to update the earlier book by Tillyard. His interest in butterflies did not lapse, and in 1972 he co-authored *Butterflies of Australia* with Dr Ian Common which long remained the most comprehensive book available on this subject.

Doug was always committed to finding ways to manage insects, towards improving the quality of food, other essential resources and the environment. After his retirement in 1981 and stimulated by the increasing detrimental effects of insecticides, Doug began surveys to identify the major pests and weeds of the Pacific and Southeast Asian regions and assess them as candidates for biological control. He made contact with people in the South Pacific Commission Nations and helped organise a highly successful biological control workshop held in Tonga in 1985. Following this event

Doug began a series of books on biological control his first, *Biological Control: Pacific Prospects*, and a supplement authored with Dr K.R. Norris. With support from ACIAR, Doug published a series of other books on biological control in the Pacific and Southeast Asia. Two more are currently in press.

Doug was known throughout the Pacific as one always willing to listen to their local entomological problems and to consider their cultural needs when suggesting solutions. Those who met him during visits or at workshops, were impressed by the warm and friendly way he applied his outstanding entomological knowledge. The Pacific people are missing their friend and colleague, but will remember how much he has contributed to helping them understand their insect and weed problems. Doug's Australian friends and colleagues are likewise missing his warmth, kindness and the access to his immense knowledge, for which there are no replacements.

Doug had a major role in the establishment of the Canberra College of Advanced Education, now the University of Canberra. His scientific leadership was recognised by his election as a Fellow of the Royal Society, Fellow of the Australian Academy of Science and Fellow of the Australian Academy of Technological Sciences and Engineering, and several other overseas organisations. He was made an Officer of the Order of Australia (OA) in 1980. Doug is survived by his wife Dawn, their daughter Jill, and sons Douglas, Jonathon and Gowrie, and their families.

Don SANDS

A life-long friend

We must both have been about 12 years old when I first met Doug. We lived in adjoining suburbs of Sydney and travelled home from school by train. I had in my ridiculous straw hat some butterfly larvae ready to pupate. Doug said "If you are interested in butterflies, you should meet my uncle". Doug's uncle was G. A. Waterhouse, the "butterfly man", a most generous person who lived in the same area as I did. In the following years on suitable Saturdays he would drive us to his favourite collecting spots around Sydney, and we both learned a lot of elementary biology in the process. He assured us that there was a future if we studied entomology, and encouraged us to go to the University, where we studied under the wise guidance of A.R. Woodhill.

Doug's father was E.G.Waterhouse , Professor of German and Modern European Literature at the University of Sydney. He had a great interest in camellias, about which he wrote two superb volumes, and his beautiful garden and home "Eryldene" is now a mecca for garden lovers. Doug did well at school, helped, I always thought, by a faithful galah named Doctor, that sat on his knee while he did his homework. Doug excelled when we got to University. He was always rather pleased that he won a prize in chemistry, beating into second place John Cornforth, subsequently Nobel Laureate in Chemistry.

G.A.Waterhouse had for a short time been Executive Officer of the newly formed CSIR Division of Economic Entomology in Canberra. After we graduated, he suggested that we should apply for a job there, and thus when we were appointed we came to Canberra together. Accommodation was in short supply, and so for a while we shared a room in a boarding house in Ainslie, and walked to work across the paddocks to the laboratory at Black Mountain. We remained close friends for life.

Doug's contributions were remarkable, and not only in entomology where his role will be appreciated for years to come. He affected the lives of many people in many parts of the world, and always with a jovial spirit and an obvious love of life. His qualities of ability, vision, tenacity and hard work, as well as his administrative capacity all contributed to his effectiveness. We will miss him, but rejoice in having known him and in knowing that his legacy will live on.

Max DAY

Working with Douglas

A recollection of an early association with Doug revolves around an excursion we made along the coastal area of southern New South Wales, when, as two downy Assistant Research Officers, we set out to lay a long line of blowfly traps to catch samples which we hoped would prove to the world that sheep blowflies were scarce or absent in cattle country. Thus we would vindicate the Divisional view that the fly was largely dependent on living sheep for survival. We traveled in a battered utility "powered" by a cumbersome producer gas unit that hung like a remora behind the tailboard. This war-time economy occasionally left us floundering when it came to climbing out of a river bed, and had it not been for lightning operations by Doug under the dashboard, which temporarily brought precious petrol to the labouring engine, we would have had to suffer the ignominy of being towed out. Equally firm and successful was Doug in dealing with some horny-handed yokels who thought our noisesome traps would serve some useful or ornamental purpose around their country seats. There were more sheep blowflies in the catches than there should have been, but the resourceful Douglas showed that, in relation to other carrion blowflies, there were relatively

fewer than in the sheep areas of the Monaro.
After doing it tough for some years in Queensland, principally contributing to research on the buffalo fly and cattle tick, I returned to Canberra and eventually was appointed to the position of Assistant Chief. Under Doug's leadership, for many succeeding years, the Division entered upon a golden age of productivity. My work involved such tasks as drafting applications for funds from a number of bodies representing primary producing industries, much correspondence, and writing cases for the advancement or reclassification of staff. The last was a finicky job, its results attracting close scrutiny by Head Office, whence nit-picking anonymous critiques often bounced back. When the results were finally announced there came a swarm of hornets about our ears, in the form of disappointed hopefuls who had not received advancement. One way or another Doug managed to sooth most of these unfortunates, and urge them to a productive year in the hope of better luck next time.
I found great satisfaction in attending meetings on various subjects, involving commonwealth and state entomologists, either alone or as amanuensis for Doug. Sometimes we ran into a stormy patch which often gave me food for thought on the critical importance of state boundaries, but on the whole much good came of the workings of these committees, in particular in regard to the rationalisation of the use of insecticides.
A notable feature of the years of our association was Doug's annual "trip" overseas. Let no man say that these were junketings at the taxpayers' expense. They were, in fact, planned to the last detail for months in advance to get the utmost out of scientific contacts, visit divisional field stations, and permit him to attend international scientific meetings. Time was apportioned so carefully that some applicants for advertised positions were actually interviewed when he was swapping planes at airports. Not having Doug's intricate web of scientific contacts I might well have been at sea as Acting Chief in his absence, but by some magic he seemed to have foreseen and taken care of any critical situation that might have arisen in his absence. The only bombshell that I can recall was Rex Connor's bid to secure control of CSIRO divisions concerned with mineral and energy production, which sent us all into a dither, but, of course it was the business of Head Office, and they dealt with it very effectively.
Doug's regular overseas travel involved me in attending the annual meeting of Chiefs and Executive, which was held at Limestone Avenue. I found these meetings rather unproductive, and I think Douglas had early made the shrewd assessment that the Division would get more out of his overseas travel than it would out of his attendance. I heartily endorsed his views.
A memorable and unhappy event which Doug and I had to confront was a rebellion of a group of senior researchers who wanted to establish themselves, presumably as a separate Division, and funded by a considerable golden handshake from Doug, to set them up in business. They were faced down, and had to return to their regular, well-funded activities. Of course relations were permanently soured, but I put it on record that Doug never lifted a finger to exact vengeance. Now that he is no longer with us, this might well be borne in mind by those involved.

Dick NORRIS

Paean from a Pom

Many have paid tribute to Doug as an entomologist; I would like to record some thoughts, after 34 years of association and friendship, on Doug as an outstanding leader, a great human being and a true Australian. The words that keep coming to me are loyalty, commitment and determination. I worked for Doug for ten years spreading exotic dung beetles around Australia. The project was at times controversial, but we could not have had a more loyal boss – backing us scientifically, supporting us financially, and taking personal responsibility if flak started flying. Better still, he generated great enthusiasm and made us proud of what we were doing. Would that all managers were so rewarding to work for.
Our more recent association, over 16 years, was through the Australian Centre for International Agricultural Research (ACIAR), for which I worked and for which Doug was consultant, adviser and mentor. This chapter of Doug's life started after he had retired from CSIRO, but retirement was hardly an appropriate word. He spent great energy, effort and time building biological control programs for developing countries in the South Pacific and Asia. He travelled frequently to these regions, gave keynote addresses at symposia, helped and encouraged individual scientists, and provided huge amounts of resource information to facilitate projects in his beloved field of biological control. He was held in enormous respect and affection throughout these regions – at times with a reverence that is normally reserved for the immortals.
It was in his production of reference books that Doug showed that he had not in fact retired. Through ACIAR

alone he published 8 major monographs, totalling over 2,000 pages, and another four are just being published or are in press. How many scientists achieve that during their whole working career, let alone in their "retirement"?

And much of what Doug did was quiet and unobtrusive, though not unnoticed by those who benefited from it. He went out of his way on many occasions to help and encourage young scientists whom he considered promising, and no-one was more pleased than he when they responded and realised their potential. He was a great and loyal friend to many.

Finally, I admired Doug greatly as a proud and committed Australian. Coming to this country as a raw Pom, I was "educated" in many cultural aspects of my new home by someone who knew it, cared passionately about it, and was proud to be part of it. I felt that a land that produced people like Doug must have a fair bit going for it, and I have never had cause to change that view. Onya, mate – I and many others will not forget you.

Paul FERRAR

Doug and the ANIC

Throughout his time as Chief of the Division, Waterhouse strongly supported the taxonomists, accepting the view that insect collections and taxonomy were essential to the Division's ecological investigations of Australian insect pests. However, the CSIRO insect collections were referred to in publications by various names, a situation considered likely to cause confusion. Waterhouse therefore sought the support of the Executive, soon after he became Chief in 1960, to have one official name applied to these collections. Despite some opposition from the many individuals and bodies consulted, the Executive recommended the proposal to the Minister of Science, who arranged for the official title 'Australian National Insect Collection' to be gazetted in 1962.

About this time, Waterhouse gained Executive approval for the Division to sponsor the publication of a textbook of Australian entomology. He appointed Ian Mackerras as editor-in-chief who, with the participation of 30 authors, including 16 taxonomists and other officers of the Division, prepared a book of 1029 pages with 2400 mostly original illustrations. Published by Melbourne University Press in 1970, a supplement was added in 1974, and a completely revised two-volume edition appeared in 1991. These volumes have become a standard university text throughout the world.

As the Collection had grown rapidly, through taxonomic and ecological field-work as well as bequests and gifts from private collectors, consideration was given to the provision of more space for specimens and research laboratories. Following Waterhouse's approval of this in 1975, various plans for a new wing or separate building were submitted. Early in 1979 a contract was let, the building being completed in September 1980. At the official opening by the Minister for Science in May 1982, the building was named "The D.F.Waterhouse Laboratory of Insect Taxonomy" in memory of the sound support Doug had given to taxonomy and the Collection over many years.

Ian COMMON

The halcyon days of science

I first met Doug Waterhouse in 1976 when he visited San Francisco to interview me for the Orthoptera position left vacant when Ken Key retired. He said the Division was trying to get someone interested in the Ensiferous groups (katydids, crickets, etc.) of the orthopteroids to balance Ken's life's work in the Caelifera (grasshoppers). He said there were "opportunities there". He was right because within a few months of starting in Canberra, the first Cooloola Monster, a representative of an undescribed family, was submitted for identification.

In the early days I was impressed with the way the Division approached its taxonomic pursuits. Ken always said, "...they provided the tools necessary to get the job done." The "job" was to document, by description and observation, the diversity of Australia's insects. We were fully funded to do this. Because of the way the Division was run in those days, Doug was aware of what everyone was doing and their perceived needs. The annual budget was a one-line item and he controlled the purse strings. We had a regime of "green-sheets" which were copies of all out-going correspondence. The Chief and the Divisional Secretary read all of this usually by morning tea of the following day. This seemed most unusual to me having come from America where such behaviour would violate at least 3 articles of the Constitution relating to privacy. It was effective, however. He knew what people were doing, and on more than one occasion I was asked to show Doug and some of his staff some peculiar orthopteroid that I had been waxing lyrical about to overseas colleagues.

At one stage I had completed a catalogue of described Australian Tettigoniidae and had told my wife that what I now needed was a "type trip" to Europe. The very next day Doug proposed such a trip. It was made in 1980, fully funded with a generous per diem. (Now one is required to sign away all of these rights). While overseas I was

looked after by the Commonwealth Scientific Officer in England, Germany and elsewhere. These folks had been given my itinerary and were eager to help even to the extent of providing office space. The change of chiefs, priorities and the initiation of "economic rationalism" radically changed the running of the Division and of CSIRO. We all knew something was radically wrong when $25K was paid for the meaningless logo, and wondered what was wrong with "CSIRO" as a logo. The Division now approaches science as a business, but creative science cannot be run as a business. You don't need management courses to realise this. No one was ever "made redundant" in Doug's day. Now the Division uses redundancy as a "useful management tool". The Division has an impressive "Hall of Shame" comprising world-class scientists whose careers have been shortened in the interests of economic rationalism. Resources were spent on science and not management courses. Neither Doug nor any of his staff had a company car. And the windows were not washed 4 times a year (inside and out).

David RENTZ

A voice from overseas

Doug Waterhouse was a unique individual in every sense of the word, and with his passing the mould has definitely been broken. However, his legacy lives on through his many achievements, not least of which is his influence on the careers of so many entomologists in Australia and elsewhere. I was one of these, and our first somewhat serendipitous meeting was back in 1964, where we both stopped off for a few days in Hong Kong after the Pacific Science Congress in Japan, and I accompanied Doug while he looked for insects on lantana in the New Territories. At that time, Doug had already been Chief of Entomology at CSIRO for several years, while I was working in overseas aid programs in Southeast Asia. Five years later, I was interviewed by Doug for a position with the Division's pheromone group, and this event took place on a London Underground train – the Circle line, I recall, which allowed for an open-ended interrogation!

Doug's unique foresight in actively building teams to develop all key major components of pest management, based on sound ecology, behaviour, genetics, biosystematics and other disciplines, made the Division an extraordinarily exciting place to be in. His capacity to raise funds was truly remarkable, aided by the fact that these were also the halcyon days of both government and industry core support for strategic research. That the Division was seen as a world leader in many areas of entomological science was also largely a reflection of Doug's international reputation, and his unique abilities in championing the division's scientists and their programs. His stature in the world of biological control of insects and weeds was virtually unrivalled, and remained so up to the last days of his life. Despite having, with tremendous courage, to battle with cancer for many years, he produced a stream of publications, including several books.

I can say without hesitation that Doug represented the greatest single influence on my career, and I shall always consider it a very special privilege to have known and worked for and with him for so many years.

George ROTHSCHILD

Making sense of scents

One morning in late 1963, mid-way through my doctoral research in Entomology at the University of Queensland, I had an important looking visitor. He introduced himself as Doug Waterhouse, and expressed interest in my research on the biology of Australian bugs. He explained to me that, for his research on whether the stinky fluid in the glands of bugs was elaborated internally or derived from plants, he needed material of different bug species raised on artificial diets. It was an interesting coincidence as I had just made a break through by rearing bugs on nothing but Sunflower seeds and moisture. I was thus able to provide Doug with material for his research, from which his ground-breaking 1964 paper with A.R.Gilby on the composition of the fluid of the scent glands of bugs appeared in the Proceeding of the Royal Society of London. This finally answered the question of the elaboration of defensive secretion in the stink bug bodies.

Throughout my interaction with Doug, I found him to be a scientist of the very first order. His questions were precise, searching and in the many letters he wrote to me, he showed an extraordinary command of the English Language.

When, in 1965, I won a lecturing position at the University of Ghana, his reaction was supportive and he wrote "I am really sorry that you are leaving Australia. I recently relinquished the secretaryship of the Australian Academy of Science and was looking forward to some personal research on bugs —— but it would be unwise for you to let this opportunity slip. You can work on Heteroptera in those parts of the world ——".

From December 1965 to his retirement in early 1980, Doug continued to send me a Christmas card every year without fail. His contribution to the personal

development of many third world entomologists is well known, and in PNG his close involvement in several biological control projects was much appreciated. Doug, an architect of the Australian Entomological Society, will be missed sadly as an outstanding scientist, friend and facilitator, but above all as a man.

Ray KUMAR

A champion amongst Chiefs

When Doug Waterhouse interviewed me for a position in CSIRO, we were in the city terminal of Trans Australia Airlines in Sydney and I recall the initial discussion was over the difficulty of buying a new pair of shoes to take overseas. Apparently I must have said the right thing about shoelaces as well as population dynamics and sometime later I joined the tradition of young scientists recruited to the Division after Doug's personal interviews during his international travels. In the days of no formal selection panels and no selection criteria, Doug virtually hand picked a team of talented scientists that formed the basis for a dynamic and productive Division for many years.

Doug himself joined the Division in 1938 and was thrown into the battle against sheep blowfly. An amateur entomologist and butterfly expert of several years' experience, Doug's initial professional interests were primarily in physiology, in a very broad sense, including behaviour, biochemistry and histology. During his first years, he worked and published on repellents, insecticide action, digestion, particularly of wool by wool moths, and on the nature and function of insect glandular secretions. However, by the time I joined the Division, Doug was already known as a champion of biological control, for which he probably became best known. Under his leadership from 1960 to 1981 the Division undertook many biological control programs against arthropod pests and revamped the field of biological control of weeds. The massive dung beetle program was a pioneering enterprise, as was the use of nematodes to control Sirex wood wasp and the campaign to introduce skeleton weed rust, the first pathogen ever deliberately introduced for weed control. In each case, once convinced himself, Doug backed his scientist's judgement to the hilt. Skeleton weed was my first project in the Division and I well remember accompanying Doug (as back up entomologist!) to discussions with Plant Quarantine and plant pathologists on the use and introduction of pathogens for biological control.

Building on these successes, a master stroke was to volunteer the Division as the guinea pig for the Industry Assistance Commission's 1975-76 cost benefit analysis of returns on agricultural research, the favourable results of which have been valuable to the Division for many years, up to the present day.

Both as an amateur and during his career in the Division, Doug was also a never failing supporter of systematics. He was the driving force behind ANIC being gazetted as a national collection and the construction of its first proper home, in the new wing named in his honour in 1982.

It would be a rare individual who could say they didn't have some differences of opinion with Doug, but he liked to describe himself as a benevolent autocrat and one can't help but appreciate what he did for entomology and for the Division. Doug Waterhouse lived and breathed entomology from an early age until he died, sadly, on December 1 last year. His election as Honorary Chairman of the Council for International Congresses of Entomology last year, an honour not previously bestowed, symbolised his role and stature across the world. We have lost a true champion.

Jim CULLEN

Doug and the AES

Doug Waterhouse was one of those rare, gifted individuals who made major contributions to society throughout a long and productive life. Much will be written elsewhere of these achievements but I shall confine my remarks to two facets of his activities where our paths have crossed.

Doug facilitated the formation of the Australian Entomological Society by providing in CSIRO an operational platform for the evolution of the Society. In 1961, his Division of Entomology compiled a register of Australian entomologists who supported a national society. With the founding in 1962 of the Journal of the Entomological Society of Queensland as the forerunner of a national periodical published by a national society of Australian entomologists, Doug provided vital support to the infant journal particularly through subsidised purchase of reprints. Later, when this journal was subsumed into the Journal of the Australian Entomological Society, the patronage continued, ensuring its future also.

As moves for establishment of a national entomological society gained momentum during 1962-63, a meeting of entomologists in Canberra in January 1964 agreed to form such a society and appointed a working party to draft its constitution. Doug was a member of this working party and the inaugural meeting of the society was duly held on 17 August 1965. Doug served as President from 1969-1972 culminating in the highly successful 14th International Congress of Entomology held in Canberra in August

Doug Waterhouse happily writing one of his many books at CSIRO Entomology, Canberra

1972 of which he was president and chairman of the organising committee. Doug very appropriately was elected an Honorary Member of the AES.

Of particular significance also was his role in establishing in 1972 a centre for postharvest grains research in CSIRO at a time when the Australian grains industries were facing daunting challenges from pest problems and pesticide resistance. The amalgamation of the grains research programs of CSIRO and the Queensland Department of Primary Industries into a highly successful and sustainable Stored Grain Research Laboratory provided the basis for this centre. This Australian initiative complemented Doug's ongoing contribution to global food security, through the FAO Working Parties on Pest Resistance to Pesticides and Integrated Pest Control, in which he participated for most of their effective life.

Bruce CHAMP

'Il faut cultiver notre jardin'

I was 30 years old before joining the staff of the British Museum, having worked on whiteflies as an economic entomologist in various tropical countries. I soon realised that to grow as a taxonomist I must go and see insect diversity in action, and Doug Waterhouse provided the opportunity. By bringing me to Australia for 12 months in 1967 to study thrips, Doug provided suitable soil and financial fertiliser for this emerging taxonomic seedling to grow strongly. Thirty-four years on, cultivation by Doug of the Australian thrips project has yielded rich fruit, including three Australian PhDs, two postdocs, an international group of collaborators, two major ARC Grants, and more than 80 publications on Australian thrips. Not that this growth was without periods of die-back. Customs Regulation 13A was responsible for a break of nearly 10 years in publications on Australian thrips. The Director of the Natural History Museum had assured Doug that there would be no problem in returning to Canberra all holotypes derived from material held in London. Entomologists had other views, and many in Australia worked hard to convince legal authorities here that international collaboration was more productive than coercion. But the pruning due to that fracas ultimately provided the stimulus for the subsequent rich yield in information on Australian thrips. As in so many other areas of entomological science, Doug provided the opportunity and the stimulus, and we all remain in his debt. As Voltaire's words indicate, it's now up to us.

Laurence MOUND

AES Conference 2001

The 32nd Annual General Meeting and Scientific Conference of the Society will be held at the Manly Pacific Hotel, Sydney from 23-28 September, 2001. A circular and call for papers is being finalised, so start planning for your participation in what should be an enjoyable and rewarding conference.
For further information:
Convenor: Robert Spooner-Hart
Centre for Horticulture & Plant Sciences
University of Western Sydney Hawkesbury
Locked Bag 1797 South Penrith Distr. Centre
South Penrith 1797
Tel: 0245701429
Fax: 0245701314
Email: r.spooner-hart@uws.edu.au
or
Alison Campbell
Hawkesbury Global
0245701690
Fax 45701520
Email: a.campbell@uws.edu.au

Core Executive Meeting 6th December

The Secretary reported that subscription renewals had been sent out in November during Treasurer's absence, and that fully paid up members for 2000 were sent their subscription renewals by e-mail.
The Treasurer noted that accounts are still to be submitted to the auditor by the previous executive, and the 2000 accounts thus cannot be prepared. A pro forma budget reveals an operating shortfall that will be exacerbated by increases in journal production, costs associated with GST, and membership of FASTS.

Blackwell Science contract: The proposed contract to publish *Australian Journal of Entomology* for the next three years shows a large increase in cost to the Society. The Journal publisher cannot be changed at this late stage as the next issue is at proof stage, but negotiations continue.
International Congress of Entomology: The current and immediate past Presidents and Vice presidents make up the executive committee for the ICE with Myron Zalucki as Chair. Subcommittees will be formed by February and will elect their own chairs. All subcommittees will meet at the next AGM. A Principal Conference Organiser is to be elected soon.
32nd AGM & Scientific Conference: The Executive discussed the principle of cross-subsidisation between conferences and general running of the Society. While any surplus from conferences has often been an important item in the Society's revenue, the Executive does not expect attendees to subsidise other AES activities beyond the conduct of the Conference and AGM. Conferences are expected to be self-funding, and provision of the illustration and Phil Carne prizes is considered to be an integral part of the Conference.
FASTS - top ten issues: FASTS is currently developing its top ten issues for science. The society has already commented on these, but AES may with to identify entomology key issues.
Other Business: The President discussed the need for a 5-10 year strategic plan which should include what the AES wants to do and where it wants to go - philosophically, administratively and, financially. The executive should aim to use and update the Operations manual as well as identifying the next executive at an early stage so that there can be an overlap in the changeover.

New Members:
Dr Annice Lloyd
Dr Yeon Jae Bae
Ms Sue Baker
Dr Harlan D. Feese
Dr Neville Fernando
Ms Kyla Finlay
Dr John La Salle
Ms Melinda Lee Moir
Mr Christopher Krawec
Mr Owen Seeman
Mr Phillip Smith
Members with untraced address:
Ms Flor Ceballo QLD
Dr Marcus Matthews ACT
Mr David Slaney QLD
Miss Madeleine Angus SA

Student forum

Hello again. Any students or recent students (ie. those that have just finished their postgraduate theses) who would like to express an opinion or to precis their research in this section, please contact me by email (lsilberb@metz.une.edu.au)
or by phone (02 6773 3021).

Tish SILBERBAUER

Insect succession on vertebrate carrion in Victoria: its ecology and application to forensic entomology

Melanie Archer (PhD student)
Supervisor: A/Prof Mark Elgar (Zoology Dept, University of Melbourne)
Insects play a central role in the breakdown of vertebrate carcasses. There is a predictable sequence of stages in carcass decay, and different insect species are attracted at each stage, thus

forming a succession. The stage of succession that has been reached depends on time after death, therefore for forensic purposes, it is possible to make extremely accurate estimates of the time since death for insect infested human bodies. Forensic entomology is practiced in a rapidly growing number of countries. However, the succession of carrion insects varies between localities, because of differences in species composition, habitat and climate. Thus, the accuracy of an estimate of death time depends on understanding the biology of species local to the death scene.

There have been few carrion succession studies conducted in Australia, and none in Victoria. Therefore my research, which commenced in June 1998, involves collecting some basic data in order to provide a forensic entomology service in Victoria. Additionally, I have been conducting experiments on aspects of carrion colonisation and oviposition choice by blowflies.

AIMS AND PROGRESS

I have recently completed a two year study to determine the order and timing of insect succession on animal carrion in Victoria during all seasons, and will soon begin analysing the data. I also have a paper in press about the natural history of one beetle species involved in succession.

In the first year of the study, five piglet carcasses, in scavenger proof mesh cages, were placed every second month at my Healesville field site. In the second year, carcasses were placed every third month. In Spring and Summer, carcasses were visited daily for the first week after placement, then every second day for the following week, and thereafter as often as merited until they were skeletonised. In Autumn and Winter I visited carcasses half as frequently as in Spring and Summer. At each visit, the insect species present and their approximate numbers were recorded and samples were taken of any species that could not be identified by eye. Carcasses are also weighed by suspending them in their pre-weighed cages from digital scales.

To fulfil the aim of applying my succession data forensically, I have conducted casework for the Victorian Institute of Forensic Medicine, the organisation that provides forensic medicine services in this state. In 2000, I was involved in eight cases and also had the opportunity to teach the forensic entomology component in two graduate courses, one in forensic medicine and one in forensic odontology.

Staff at the Institute have been extremely supportive, and have not only requested my involvement in cases where an estimate of death time was important, but they have also alerted me when they admit bodies that are simply of entomological interest. The time of death has been fairly well known through the circumstances of several of these cases, which has proven particularly valuable for me as an opportunity to see how close were my own estimates. Recently, I was involved in a case where the body was almost certainly twenty days old. Based on my succession data collected under similar temperature and habitat conditions to those of the death scene, my death time estimate was between 19 and 21 days, although the best match for larval sizes and species composition was at 20 days.

To examine experimentally the patterns of initial carcass colonisation by blowflies, I have conducted one experiment on oviposition choice and subsequent movement of maggots within the carcass. Mark Elgar and I currently have a paper on this in review. We found that females favour certain locations on the carcass for oviposition or larviposition, but the locations favoured change with time after carcass exposure. We also found that higher numbers of maggots are found at certain locations, but this also changes with time after carcass exposure. I am currently conducting follow-up laboratory and field studies to elaborate on these findings.

Melanie ARCHER
Zoology Department
The University of Melbourne, Vic. 3010
marcher@futureweb.com.au

WWWeb Spinners

Tish Silberbauer, *Ecosystem Management, School of Rural Science and Natural Resources, University of New England, Armidale, NSW 2351. Email: LSILBERB@metz.une.edu.au*

Thanks to Ebbe Nielsen for correcting an acronym from August's issue. WERF stands for the "Wedge Entomological Research Foundation".

Institutional sites

http://www.bio.usyd.edu.au/hochuli/hochlab.htm Dieter Hochuli's lab web page. This includes descriptions of his and his students' projects on the ecology of terrestrial arthropods.

http://www.uky.edu/Agriculture/Entomology: University of Kentucky Department of Entomology web site. The site includes, amongst other things, a large list of EntFacts sheets (with an American bias) divided into field crops, fruit, livestock,

landscape plants, vegetables, home & health and miscellaneous.

Taxon-specific sites

Their advertisement describes the site very well: "Do you love fruit flies? Well, of course you do. If you truly love fruit flies and all they stand and/or fly for, you'll visit them in all their multispliferous splendor at:

http://www.multiplefruitfly.com: No money is made, no ads are supported, no tricks are employed, and no users ever come there. Mostly just fruit flies. Sure gets quiet, apart from all the buzzing. Sincerely, The Society for Empowerment of Fruit Flies (Friendly warning: the site is entirely useless, and you'll get nothing out of it more than a lingering sense of confusion. But it's about BUGS! So it is relevant, after all.)" I loved the haikus on this site.

http://space.tin.it/scienza/silivoc/ Moths and Butterflies of Europe. The page provides a large iconographic sample of European moths and butterflies and, for each species, information about food plants, breeding and life cycle. The photos on this site are fabulous, but the life cycle data tends to be limited to photos (albeit beautiful photos) of various life-stages.

Others

http://www.sil.si.edu/DigitalCollections/NHRareBooks/Sturm/sturm.htm A digital version of a rare entomological text, Jakob Sturm's engravings of German insects (1796 text), *Verzeichniss meiner Insecten-Sammlung* ("List of my insect collection"). The text and pictures on this site can take ages to download, but if you're interested in old engravings and beautiful ento-artwork then the wait is well worth it.

http://www.anos.org.au/ Australasian Native Orchid Society. This is not an insect page, in fact insects don't rate a mention, but for those of you who are interested in insect-orchid mutualisms this may be a useful resource. If you, like me, are not studying orchids and insects, then following the links to the orchids of north-eastern NSW reveals a fabulous and beautiful site of orchid photos and biological information for a wide range of semi-tropical and tropical orchids.

Scientific Societies & Journals of Interest to AES Members

This is a collation of responses from members of the email list 'Ozentomology'. The list is by no means complete and if you will send to me details of other societies and newsletters that are of interest to *Myrmecia* readers, I will include them in the next issue.

Tish Silberbauer, *Ecosystem Management, School of Rural Science and Natural Resources, University of New England, Armidale, NSW 2351. Email: LSILBERB@metz.une.edu.au*

Societies

Australasian Arachnological Society
Richard J. Faulder (Administrator)
Yanco Agricultural Institute, YANCO NSW 2703, Phone: 02 69512642, Fax: 02 69512719.
Email: Richard.Faulder@agric.nsw.gov.au
Why not join the Society? Four issues will cost you (in Australian dollars): Discount 8; Normal 10; Institution 12.

Australasian Evolution Society
http://www.zoology.unimelb.edu.au/aes/
Mark Elgar (President), Department of Zoology, University of Melbourne, Victoria 3010. Phone: 03 8344 4864; Fax: 03 8344 7909.
Email: m.elgar@zoology.unimelb.edu.au

Australian chapter of the International Union for the Study of Social Insects (IUSSI)
Mike Schwarz (Secretary of the Australian branch of IUSSI), School of Biological Sciences, Flinders University, Bedford Park, SA 5042. Phone: 08 8201 3729; Fax:08 8201 3015.
Email: Michael.Schwarz@flinders.edu.au

Australasian Pollination Ecologists Society (A.P.E.S.)
http://www.roseworthy.adelaide.edu.au/APES/welcome.html
The aims of the Society are to participate in, encourage, and communicate research in the field of pollination ecology in Australasia. A.P.E.S. welcomes the involvement of all botanists, ecologists, zoologists, population geneticists, embryologists and others with an interest in pollination ecology in Australasia.
Australian applicants: Dr Sue Carthew (Vice-President), Dept. of Applied and Molecular Ecology, The University of Adelaide, Roseworthy, SA, 5371.
Overseas applicants: Dr Alastair Robertson (President), Ecology Dept., Massey University, Private Bag 11222, Palmerston North, New Zealand.
Email: A.W.Robertson@massey.ac.nz

Ecological Society of Australia
http://life.csu.edu.au/esa/
Membership Manager, Dr Sue Yates, PO Box 20,

South Fremantle WA 6162, Australia.
For other enquiries
Hon. Secretary, Ecological Society of Australia Inc., P.O. Box 1564, Canberra, A.C.T. 2601, Australia.

Genetics Society of Australia
Phil Batterham (Secretary), Department of Genetics, University of Melbourne, Victoria 3010
Phone: (03) 8344 5137 / 5136.
Email: P.Batterham@genetics.unimelb.edu.au.

The Mosquito Control Association of Australia Inc. (MCAA)
We aim to foster and adopt policies for rational and responsible approaches to mosquito control; assist in developing and projecting a positive view of mosquito control; assist in ongoing training for control managers and technicians; provide current advice to members on mosquito control; provide advice on new technical advances and products relevant to mosquito control in Australia; publish the Bulletin to disseminate information about biting insect management.
Roy Durre (President); MCAA Inc. P.O. Box 852, Cleveland, Qld. 4163.
Email: mcaa@winshop.com.au.
http://www.mcaa.org.au

Journals and Newsletters
Aussie Bee
Dr Anne Dollin, Australian Native Bee Research Centre, PO Box 74, North Richmond NSW 2754, Australia. Phone: 02 4576 1495 Fax: 02 4576 1196.
Email: anbrc@zeta.org.au.
http://www.zeta.org.au/~anbrc/
What's the latest buzz on native bees? Send us your email address and receive FREE email updates! A Quarterly Service from the ANBRC!

Invertebrata
Tasmania's Invertebrate Newsletter. Produced at Queen Victoria Museum and Art Gallery, Launceston, Tasmania.
Dr Robert Mesibov (Editor), Honorary Research Associate, Queen Victoria Museum and Art Gallery. Home contact: PO Box 101, Penguin, Tasmania, Australia 7316. Phone: (03) 6437 1195.
Email: mesibov@southcom.com.au.

Plant Protection News (PPN)
PPN is an email newsletter for the plant protection list server. For the full details on all articles please visit the Plant Protection News website:
http://www.affa.gov.au/docs/animalplanthealth/plant_health/ppn/index.html.
It is hoped this newsletter will be a reflection of current activities within the plant protection community, so if you have information of interest that you would like to contribute to PPN, please e-mail it to:
plant.protection@affa.gov.au.

Under Control - Pest Plant and Animal Management News
Quarterly newsletter, 20 pp., established 1997, published by the Keith Turnbull Research Institute, Agriculture Victoria, Department of Natural Resources and Environment (NRE).
The focus of the newsletter is weeds, with significant content on biological control; pest insects, especially pests of amenity trees and urban areas; and vertebrate pests. *Under Control* carries regular features on new invertebrate biocontrol agents for pest plants in south-eastern Australia and the impact of existing agents.
Distributed to Landcare and Friends groups, local government, NRE catchment management and extension staff, pest management researchers and others, mainly within Victoria.
Available in hard copy, by email, or on the NRE web site - http://www.nre.vic.gov.au/ - look under Pest Plants and Animals.
Editor, Ian Faithfull, PO Box 48, Frankston, Victoria, 3199. Tel: 03 9785 0105, fax 03 9785 2007.
Email: ktri@nre.vic.gov.au.

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

CSIRO Entomology
In November *The Butterflies of Australia* was launched by the Minister for the Environment and Heritage, Senator the Hon. **Robert Hill** and **John Landy** at a well attended function at Parliament House in Canberra.
The Chairman of the ANIC Fund Board, Olympian and amateur naturalist, John Landy retired from the ANIC Fund Board at the end of 2000 when he became the 27th Governor of Victoria. **John Stocker** is now the new Chairman John was the Chief Executive of CSIRO (1990-95), Australian Chief Scientist (1996-98), is a Principal of Foursight Associates Pty Ltd and a Director at Telstra Corporation. John has had a longstanding interest in the ANIC.
Neal F. Lane, Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy at The White House, visited the ANIC during his visit to Australia where he viewed the activities in the Biodiversity

Informatics Laboratory.

Ebbe Nielsen has been appointed to the United Nations Environment Program (UNEP) - World Conservation Monitoring Centre (WCMC) Scientific Advisory Committee which held its first meeting in Cambridge (England) in November. At the same time the annual meeting of the Major Systematic Entomology Facility (MSEF) group took place in Berlin. Key issues included increased collaborative research and services (the minutes will shortly be available at www.ento.csiro.au/msef). Ebbe also served on the Australian delegation at the final meeting of the Interim Steering Committee for Global Biodiversity Information Facility (GBIF) where documents relating to the formation of GBIF were agreed to by 34 countries (including Australia) and 4 inter-governmental organisations. The documents have been mailed to all countries inviting them to participate in GBIF.

Marianne Horak reports good progress with her taxonomic revisions of the genera *Hypsipyla* (Pyralidae) and *Cryptophlebia* (Tortricidae) having obtained congruent phylogenies based on morphological and molecular characters. **John Stockhard Wingham** donated his large and extremely well curated collection of moths. His collection contains many reared specimens with full biological information on the labels. The greater part of the collection was sourced adjacent to the well-known Wingham Brush reserve that is the last remnant of the rainforests of the lowland Manning River floodplains.

Nobutoyo Koda, Nazan University, Japan, visited in December to examine Arctiidae.

A new soft-cover edition of *Australian Ants* by **Steven Shattuck** was published as well as the Festschrift for **John Lawrence** *Advances in Beetle Systematics and Biology* edited by **Rolf Oberprieler**, **Andrew Calder** and **Camilla Myers** less than a year after the John Lawrence Symposium.

We are seeing less and less of **Ian Naumann** as he settles into a couple of new projects at AFFA. In November Ian was in Indonesia for a meeting of ASEANet at Bogor. While in Bogor Ian also spent time with Dr **Yayuk Sudhardjono**, who has visited ANIC on several occasions in connection with her work on Collembola and now heads the Entomology Collections at Bogor. In December Ian was in Thailand for talks with the Thai Ministry of Agriculture. While in Bangkok, Ian had time to visit and meet with specialists at two important insect collections, one in the Department of Agriculture and the other within the Department of Forestry.

This has been a 6-month period during which some major changes among ANIC staff occurred. Several senior staff have retired (or will be shortly) including **David Rentz**, **Mike Dallwitz**, **Ted Edwards** and **Toni Paine**. Ted will continue to be associated with ANIC as a Fellow and Toni as a Visiting Scientist.

David Rentz ceased employment with the ANIC on the 31 December 2000. Now Australia, and the entire British Commonwealth, is left without anyone capable of identifying a grasshopper, cockroach or other orthopteroid insect. CSIRO Entomology's involvement in orthopteroid studies commenced in 1935 when **Ken Key** was hired to study grasshopper problems in Australian agriculture. As time progressed interests moved towards understanding the taxonomy of this group because it was fruitless to do any other investigations without knowing the identity of the insects they were working with. It became apparent that more than half of the species, some economically important, were undescribed. With this in mind, Ken and his colleagues became involved in the formation of the ANIC. Ken Key, Dave Rentz and others prepared many papers, books and cd's on orthopteroids, many of which have become classics in the Australian scientific literature. Dave commenced employment with the Division in 1977 when Ken retired, and has studied many of the groups not covered by his predecessor. Dave feels "we are just beginning to understand and report on the complexity of the Australian fauna". Ironically, Volume 3 of Dave's *Monograph of Australian Tettigoniidae* will be published in mid-January 2001. This was meant to be a 6 Volume series but, alas, this will be the last. David plans to complete some of his outstanding works over the next 2 years before pursuing a life outside ANIC.

There have recently also been 3 new appointments to the ANIC. **John LaSalle** is a native Californian who received his PhD from the University of California, Riverside. He is a parasitic Hymenoptera systematist, whose additional interests in this group include evolution, biology, behaviour and their impact in both agricultural and natural ecosystems. He comes to ANIC after working from 1989 to late 2000 for CABI Bioscience, starting at the now defunct International Institute of Entomology based in The Natural History Museum, London. **Adam Slipinski** joined the ANIC in November 1999. Adam did his PhD in Cracow (Poland) where he worked on the phylogeny and classification of Cerylonidae (Cucujoidea). After finishing his PhD he worked for almost 18 years at the Museum and Institute of Zoology of the Polish Academy of Sciences, Warsaw. Adam's research has

concentrated on the phylogeny and higher classification of beetles in general, with particular interests in mycophagous and predatory groups of Histeroidea, Cucujoidea and Tenebrionoidea. At the ANIC Adam will commence several major phylogeny and classification papers on Cucujoidea and Tenebrionoidea (with John Lawrence and other overseas authorities); develop a WWW site for Australian beetles (with the ANIC Coleoptera group); start taxonomy work on important Australian beetle families including Coccinellidae, Silvanidae and Tenebrionidae. The other recent arrival was **David Yeates** who arrived in Canberra for his first day of work in the Division on the 29th of December. He has been busy unpacking a mountain of office contents. **Peter Cranston** is visiting from Davis for January, making the transition between dipterists very smooth. There are 3 generations of dipterists working in the Division on the afternoons that Don Colless is in ANIC. **Patrice Bouchard**, one of David's PhD students, has just arrived in Canberra as well, and by mid year there should be a team of 4-5 people in the Diptera unit.

Alice Wells and **Laurence Mound** spent Christmas looking for caddisflies along streams in forest west of Barrington Tops, and trying to trace thrips species to their host plants. No thrips were found on the leaves of the local *Nothofagus*, but a remarkable new species, with the last abdominal segment half as long as the rest of the body, was found breeding on *Ficus coronata* leaves in **Geoff Williams'** garden near Taree. Curiously, in December **Jenny Beard** had sent specimens from UQ of this same bizarre thrips which she had found breeding on the unrelated plant, *Ripogonum*. Since Christmas, a visit to Adelaide made possible a brief survey of the original site at which was found, 33 years ago, a tiny thrips subsequently named *Moundothrips*. The botanically ignorant young Englishman after whom this curious insect was named many years ago claimed to have taken it on 'grasses', but Alice has now identified the host as a member of the Restionaceae, a southern hemisphere family of grass-like rushes.

Jane Wright, **Peter Annis**, **Jan van Graver** and seven other members of the Stored Grain Research Laboratory, attended and presented papers at, the Conference on Controlled Atmosphere and Fumigation in Stored Products (CAF) held at Fresno California at the end of October. SGRL staff contributed to 21 papers and posters at the conference. **Pat Collins** (QDPI), **Barry Bridgeman** (Grainco Australia) and Jane were successful in their bid to host the next CAF conference in Australia. It is proposed to hold it during the week immediately before the 22nd International Congress of Entomology that will be held in Brisbane in August 2004. Before the CAF Conference, Jane and Peter visited the USDA stored products laboratory in Manhattan, Kansas accompanied by several other SGRL staff members. After the CAF conference Jane and Jan attended the Methyl Bromide Alternatives conference in Orlando. Jane then went to attend the joint meeting of the Entomological Societies of America, Canada and Quebec in Montreal in early December.

CSIRO Entomology celebrated Melbourne Cup Day with the annual Cockroach Derby, which was covered on TV and various newspapers.

Martin J. STEINBAUER
Regional Councillor

NEW SOUTH WALES

Orange Agriculture Institute

Graham Thwaite is the 2000 NSW winner of the Graham Gregory Medal for Excellence in Horticulture, to honour his many years of research in the Australian pome fruit industry, particularly on methods to control Australia's worst apple pest, the codling moth.

Murray Fletcher spent a week in Perth in December hosted by Curtin University's School of Environmental Biology. The purpose of the visit was to support Melinda Moir's PhD project examining the Hemiptera of regenerating bauxite mines in the Jarrahdale region SE of Perth. Murray and Melinda spent a day in the field and several days working on lab samples and identifying leafhoppers. While in Perth, Murray also spent half a day with **Andras Szito** at the WA Dept of Agriculture and with **Terry Houston** at the Western Australian Museum. During the week Murray also managed to gatecrash the WADA Christmas party at **Nic Monzu's** house.

Faculty of Rural Management, The University of Sydney, Orange

(formerly Orange Agricultural College)

Congratulations to **Zamir Hossain** on the award of PhD. His thesis "Habitat manipulation in lucerne: strip harvesting to enhance biological control of insect pests" was accepted without changes.

Anantanarayanan Raman has returned from a short sabbatical in the USA working on nutrient mobilization and partitioning in the galls induced on *Parthenium hysterophorus* by the gall moth, *Epiblema strenuana*, using stable isotope ratio methodology. He lectured in the University of Nebraska (Lincoln), North Dakota State University (Fargo), and the University of Connecticut (Storrs).

Entomological Heritage in Ministerial hands at the launch of Michael Braby's book

David Yeates convincing his predecessors, Don Colless and Peter Cranston
that, in 2001, every day is convivial at Canberra

Geoff Gurr recently visited **Steve Wratten's** group at Lincoln University (New Zealand). Amongst other things they celebrated the publication of their new book "Biological Control: Measures of Success" (for more details see Myrmecia web site: http://www.agric.nsw.gov.au/Hort/ascu/myrmecia/reports.htm#NewPubs).

The fourth annual Orange Entomologists' Xmas Lunch was held at the Metropolitan Hotel Bistro on 20 December. All local institutions were well represented and the celebrations were enhanced by the successes of Zamir and Graham mentioned above.

Yanco Agricultural Institute, NSW Agriculture

Jianhua Mo arrived from Adelaide in October 2000 to replace **Adrian Nicholas** as horticultural entomologist at Yanco, and has picked up the reins on the spined citrus bug project. Adrian has stayed with the Department, taking up a position in Tamworth as extension entomologist for broadacre crops.

Mark Stevens, **Glen Warren** and **Richard Faulder** have been busy out in the rice, conducting a series of chironomid midge and snail control trials and trying desperately to avoid any involvement with fruit fly control, which has become one of the regions leading employers over the last few months. *Our* **Andrea Wilson** (a totally different person to the **Andrea Wilson** from the NT often mentioned in *Myrmecia*) has fled the MIA summer to visit IRRI and then present a paper at the British Ecological Society meeting on applications of stable isotope analysis to ecology. Andrea is hoping to have her PhD thesis on food web structure in rice fields completed by the end of 2001.

Ayesha Burdett has been working on a Rice CRC funded project on bacterial insecticides, a collaborative study involving **Mark Stevens**, **Peter Hughes**, **Ray Akhurst** and **Liz Dennis** (CSIRO). In between bioassays she has been writing up her honours work for publication and applying for PhD scholarships. **Liesl Schiller** has been chasing mossies and their predators around the local rice fields, as well as doing preliminary lab work on how complex environments affect predation efficiency in damselfly nymphs. **David James** from Washington State University returned to Yanco for a brief visit during January, and was subjected to a ruthless interrogation on the mysteries of spined citrus bug by **Jianhua** and **Kim Philpott** before being allowed to escape back to cooler climes.

Sandra McDougall has been busy preparing a lettuce IPM handbook in collaboration with scientists at QDPI. In between bouts of writing she has been continuing her research on using trap crops in conjunction with *Trichogramma* for the control of *Heliothis* in sweet corn, ably assisted by **Karen Ryan**, **Kate Smith** and **Danielle Reeve**.

Murray FLETCHER
Regional Councillor

NSW Agriculture

NSW Agriculture entomology staff, past and present, gathered in Richmond on 17 January to attend a farewell lunch for **Carolyn Edge**, the former secretary of our late and sorely missed Entomology Branch. Carolyn retires from NSW Agriculture after 39 years (most of which were spent in the service of entomology). We came together because Carolyn is one of the nicest people in the world and we had a real entomology family reunion. Among past and present entomologists who attended were **Alan Clift**, **Graham Thwaite**, **Vic Edge**, **John Gellatley**, **Graeme Baker**, **Graham Goodyer**, **Eberhard Schica**, **Howard Greening**, **Victor Rajakalendrin**, **Grant Herron**, **Gary Levot**, **Royce Holtkamp**, **John Hosking**, **Barry Wallbank** and **Robin Gunning**. We had wonderful time and we all wish Carolyn a great retirement!

NSW Agriculture, Tamworth Centre for Crop Improvement

Adrian Nicholas has joined NSW Ag, Tamworth as the recently appointed, field crop entomologist. Adrian, formerly from Yanco, will work on entomological problems in cereal and pulse crops in NSW. The Tamworth entomology lab has also been pleased to welcome **Susan Young** from Glasgow. Susan, who is doing a Ph. D in entomology at Imperial College in London/Rothamsted, has come to spend a few months in Tamworth working with **Robin Gunning** and is getting to grips with cotton insect insecticide resistance problems.

University of New England

Tish Silberbauer is settling down to her new job with the cotton CRC and will continue her great work on the cotton insect complex.

Robin GUNNING
Regional Councillor

NORTHERN TERRITORY

Northern Australian Quarantine Strategy

A visit from **David Suweny**, head of plant quarantine in Irian Jaya, provided a diversion from the hectic field work schedule of **Glenn Bellis**. David joined the NAQS team on a survey of Kakadu National Park then spent a week observing quarantine border operations in Darwin prior to returning to Irian Jaya.

Erich Volschenk, Maze & Jonathan Majer, Alan Anderson, Murray Fletcher, Melinda Moir and Karl Brennan enjoy a meal at Perth

Andras Szito, Peter Davis, Murray Fletcher and Mike Grimm enjoy WADA's Xmas Party at Nic Monzu's

Shortly thereafter, Glenn spent 2 weeks surveying the northern and eastern districts of East Timor. Bad roads prevented access to the south and west of the country which was just as well as some militia trouble was brewing in those areas towards the end of this trip.

NT University

The white leaf phytoplasma transmission trials of **Janine Lloyd** and **Ros Blanche** are well underway, and the first of the final four field trips to the Ord River Irrigation Area has been completed. The search is still on for a potential insect vector of the grassy shoot phytoplasma that occurs in native grasses in the ORIA. It will hopefully be possible to find out whether grassy shoot can infect sugarcane.

Martin SHIVAS
Regional Councillor

QUEENSLAND – NORTH

QDPI – South Johnstone

David Astridge advised of new things happening. Project 1: "Management Options for Banana Bunch Pests" (FR00013 - HRDC). This is investigating new and naturally occurring insecticides that are better suited to managing insecticide resistance against banana bunch pests. The project aims to develop new strategies and techniques for cleaner, greener, banana bunch pest control. It will also be investigating the use of entomopathogenic insecticides, natural botanicals, IGR'S and some new chemistry better suited to IPM and beneficial organism conservation. This is a national project which will involve **Dr Richard Milner** from CSIRO insect pathology unit in Canberra.

Project 2: "Rambutan IPM Development Phase 1 - Insect Monitoring and Insecticide Screening". This is also a national project and will be working with NTDPI&F with **Stuart Smith** and crew. This project aims to gather some basic information on the seasonality of the major pests within the rambutan industry to develop a basic monitoring system for growers and screen IPM friendly insecticides for registration within the industry. An insect identification and monitoring poster will be released at the end of the project as well as IPM workshops for growers in both QLD and NT.

Also in the works is a collaborative Project with **Harry Fay** (Project Leader). "Mite Status in Papaya" and developing control systems for 2-spotted mites in papaya.

Other work. at South Johnstone involves industry insect identification service and consultancy work for chemical registration of new chemicals.

JCU

Simon Grove has had his PhD thesis "Saproxylic insects and sustainable rainforest management" passed by external examiners, with no changes required. His doctorate should be conferred by the examinations committee some time this month. Simons' research has spawned ten papers - published, in press or submitted. As is the case for many graduates, Simon is still searching for that elusive 'job', and has only a short time left in Australia before his student visa expires.

CRC-TREM

Current visitors to the CRC-TREM headquarters at JCU include Prof. **Wilfried Paarmann** (University of Göttingen, Germany), who has been comparing the fig-seed feeding carabid beetles of the Wet Tropics with those of Amazonia. Also visiting is **Nico Blüthgen** (University of Bonn, Germany), who is continuing his doctoral studies on ant-plant interactions using the canopy crane, and **Dr. Claire Ozanne** (University of Surrey, UK), who is spending her sabbatical studying changes in insect assemblages in rainforest edges in Palmerston N.P. and Lamington N.P.

Welcome to the new CRC/Canopy Crane research assistants **Romina Rader** and **Bradley Howlett**. Bradley is starting a research project, using the canopy crane, on the pollination of rainforest trees by invertebrates.

DPI Entomology

Patrick Huber, whose PhD thesis 'Population dynamics and ecology of *Eudocima* spp. (Lepidoptera:Noctuidae) in northern Queensland' was accepted just before Christmas, has recently been offered permanent employment with the Performance Measurement and Review Branch with Education Queensland head office, and commences late January. The offer comes after spending a year as a Data management officer with DNR in Mareeba. Despite his 'temporary' loss to entomology, and the likelihood that he'll have to buy a tie, we all wish him the absolute best.

Kelvyn Dunn dropped by on his way down the coast doing a Cape York Peninsula survey of Lepidoptera for his database. Kelvyn advised that the Victorian butterfly records in his database have recently been placed on the Museum of Victoria website.

NAQS Mareeba

News that didn't quite make it into the last edition of Myrmecia: **Greg Daniels** and his wife **Alice** called in to the Mareeba AQIS labs, to have a cuppa with

Orange Entomologists enjoy their Fourth Annual Christmas Lunch

Judy Grimshaw. They were on their way home after a visit to the Iron Range area in north Queensland. While visiting, Greg found time to put some names on a few flies in the NAQS insect collection. A few days later, the NAQS plant health team, consisting of **Barbara Waterhouse, Richard Davis** and Judy drove to the Lockhart River area (near Iron Range) to carry out a survey. This area is surveyed every year by NAQS, but this visit was further into the dry season than usual. They found that this made for bumpier roads, but simpler river crossings.

In November 2000 **Barbara Waterhouse, Judy Grimshaw** and **Kerrie Huxham** made a brief trip to Thursday Island to provide training for our Quarantine Inspectors based on the islands of Torres Strait and at Bamaga near the tip of Cape York. The training alerts them to new plant pests and weeds that our surveys have detected in the area, as well as to brush up their bait-spraying skills prior to the anticipated incursion of *Bactrocera papayae*. The Torres Strait has been experiencing annual 'wet- season' incursions of this pesky species since 1993, but thanks to their efforts, the species has never established there

Kylie ANDERSON

QUEENSLAND - SOUTH

Mosquito Control Laboratory, QIMR

Peter Ryan reports that **Brian Kay**, Head of the Mosquito Control Laboratory, was promoted to Senior Principal Research Fellow under the NHMRC and University of Queensland criteria used by QIMR. As such he now has a conjoint appointment as a full Professor. In 1999 and 2000 respectively, he was awarded the D. I. Ivanovsky Centenary medal from the Russian Academy of Medical Sciences for contributions to arbovirology and the Bancroft Medal from the QIMR Council for his contributions to its staff and science. He has published over 200 papers.

The laboratory currently has 7 postgraduate students: **Ann Marie Boyd** (urban ecology of Ross River and Barmah Forest viruses), **Louise Kelly-Hope** (epidemiology of epidemic polyarthritis) and **Bruce Russell** (subterranean mosquito ecology) are close to finishing their PhDs. In contrast, **Leon Hugo** (age grading methods for *Ochlerotatus vigilax*) and **Tim Hurst** (Australian native predators of mosquito larvae) started in 2000. **Tessa Knox** is grappling with vector competence of geographically isolated populations of *Aedes aegypti* for dengue viruses for her Honours and will be joined soon by a new Honours student, **Jason Jeffrey** (biology of *Coquillettidia*

linealis). They are co-supervised by **Michael Brown** and **Peter Ryan**.

Army Malaria Institute (AMI)

Steve Frances reports that **Bob Cooper** spent about 10 days during early January in Vietnam, working on a collaborative effort with the Vietnamese military aimed at reducing the incidence of malaria in Vietnamese soldiers. His busy 2001 schedule will continue in February and March, when he travels to East Timor for field work. **Steve Frances** spent 5 weeks of October -November 2000 on the western border of East Timor, and collected mosquitoes despite the relatively dry weather. In December he visited Assoc Prof **Richard Russell** and the entomology staff at Westmead Hospital, while on leave in Sydney.

In November, **Cassie Jansen** joined the entomology section of the institute. She is completing a B.Sc. at the University of Queensland, and hopes to complete an honours year in the future. We currently have 3 members of our section serving in East Timor, so work in Brisbane has slowed to a trickle. **Corozon Vidad**, from the Ministry of Health in Manilla, visited in November, shortly before her return to the Philippines following a successful completion of her Masters project.

Griffith University - Fruit-Fly Group

A quiet Christmas was had in the fruit fly group, with most staff (but not the students) taking the opportunity for a break. **Tony Clarke** traveled to PNG in early December, spending time in East New Britain and Lae. A whole team of entomologists gathered at the Lowlands Agricultural Experiment Station Keravat to carry out a delimiting survey for banana fruit fly, *Bactrocera musae*, which is now present in East New Britain. The team included AES members **Allan Allwood**, **Solomon Balagawi**, **David Putulan**, **Amanada Mararuai** and Tony, as well as **Luc Leblanc** (South Pacific Commission) and **David Tenakanai** (NAQIA, Port Moresby). We are sorry to report that banana fruit fly is already very widespread across the Gazelle Peninsular. Appropriate response plans are currently being considered. In Lae Tony met with **Roy Masambu** (NARI) and German volunteer scientist **Frank Ecke** to discuss the development of a collaborative project on weevil pests of the PNG Highlands.

The fruit fly group has a fully funded PhD scholarship currently available to study foraging behaviour of fruit flies with respect to protein sources (see advertisement in this Myrmecia). If any one knows a potential student, please give us a call.

Griffith University - Australian School of Environmental Studies

Soil and litter arthropods have been the cynosure for all eyes over the past several months. **Akihiro Nakamura** (supervised by **Carla Catterall** & **Heather Proctor**) submitted his Honours thesis "Do soil invertebrates reflect the state of rainforest recovery?" to very good reviews from the referees. Aki's findings will be further tested using a larger data set collected from FNQ. This data is being collected for a Rainforest CRC project (led by Carla Catterall) to investigate relationships between land use and diversity of plants, vertebrates, and terrestrial invertebrates. So far 50 sites on the Atherton Tablelands have been surveyed by the indomitable duo **John Kanowski** and **Terry Reis**. Birds, herps and plants (botanised by **Grant Wardell-Johnson** and his merry band) have been safely lodged in spreadsheets, ready for multivariate analysis once **Heather Proctor** and **Annette Ritchie** finish with 100 Tullgren-funnel extractions and 500 pitfall traps full of invertebrates. The bug-pickers hope that the others aren't in too much of a hurry.

Dave Walter (University of Queensland) and **Heather Proctor** managed to have a relaxing Christmas break after submitting their ABRS-funded LucID keys to soil mites on December 22. Two of the three mite keys are available for beta-testing: *Orders, Suborders and Cohorts of Mites in Soil*, and *Families of Parasitiformes in Soil*. They can be downloaded from the LucID website at http://www.lucidcentral.com/keys. This site also has Walter & Proctor's LucID key to *Soil Microarthropods*. Like the mite keys, it is replete with line drawings, SEM's and colour photographs. Some obscure bits of anatomy are illustrated, so if you've always wondered what the armpits of a symphylan look like, this is the key for you!

University of Queensland - Zoology & Entomology

Dave Walter reports turbulent times continue at ZEN, with construction/destruction in both the old headquarters of the entomologists (Hartley-Teakle Building) and in their impending abode (Goddard). The move to Goddard - which will include the University of Queensland Insect Collection - should take place in a few months. **Dave Yeates** has made the move to Canberra taking some of his students with him. **Dave Merritt** has just returned from a spelunking tour of glowworm habitats. **Dave Walter** is venturing into the confusing world of bee-mites after having finished numerous LucID keys to soil mites with **Heather**

Proctor (Griffith University). **Jennie Beard** (postdoctoral fellow) has returned from a bird-watching trip to Thailand refreshed and ready to tackle the taxonomy of tropical Australian spider mites. If you have unusual spider mites on your tropical plants, send 'em to Jenny. Visiting scientist **Sebahat Ozman** from Turkey is working on a gall mite of *Lygodium* fern with **John Goolsby** at the USDA biocontrol lab. *Lygodium* is a native of Australia that has made a pest of itself in Florida. This eriophyoid mite is a potential biocontrol agent.

Heather PROCTOR
Regional Councillor

Dan Smith (DPI Nambour) travelled to Orlando, Florida in early December to participate in ISC Congress 2000 (International Society of Citriculture) at which he presented a paper on 'Pesticides and biocontrol in citrus in Australia'. Naturally all the heavies in the citrus world attended so Dan felt quite at home, even if there were some divergent views re the value of introducing exotic natural enemies to enhance biological control! On the way home Dan attended a meeting at Davis, which reviewed and defined a critical research agenda for Pierce's Disease. This is a bacterial disease that is transmitted by sharpshooters (Cicadellids) and threatens severe losses to the US grape and citrus industries.

Geoff Waite (DPI Nambour)attended the International Symposium on Tropical and Subtropical Fruits, held in Cairns in late November. He participated in the post-symposium IPM Workshop, giving a presentation on the ecology of fruitspotting bugs and their management in tropical and subtropical tree fruit. Geoff caught up with **Stuart Smith** (DPIF) and **Ren Kang Peng** (N.T. Uni.) to discuss various aspects of fruitspotting bug ecology, especially prospects for biological control using green tree ants.

Iain Kay (DPI Bundaberg) was visited by **Cathy Mansfield** and **Joanne Dawson** from the Victorian Institute of Sustainable Irrigated Agriculture during October as part of their tour of tomato growing regions of Queensland. They discussed tomato IPM with Iain, attended a chemical company information meeting, and visited one of the largest tomato farms in the district where they were left in little doubt about the difficulties of heliothis management in warm northern areas.

The Bureau of Sugar Experiment Stations (BSES) centenary celebrations wound up with a formal dinner in Brisbane on 14 December - the centenary of the day that the BSES act was signed. Highlight of the night was the launch of the Manual of Canegrowing, co-edited by **Peter Allsopp** and containing a chapter on Pest Management by Peter, **Peter Samson** and **Keith Chandler**. Overall it was a good night – the formal speeches were short, the food good and the wine kept flowing. Cane toads hardly got a mention all night!

Peter Allsopp (BSES Bundaberg) has also been excited by some scarab beetles collected by **Geoff Monteith** and company in the wet scleophyll forest on the western side of the wet-tropics rainforest of north Queensland. These forests are under threat by encroaching rainforest and have been neglected, as far as collecting goes, in the past in favour of the 'more glamorous' rainforest. A new, large species of the dynastine genus *Anomalomorpha* has helped relieve the grind of research on controlling canegrubs.

Congratulations to **Errol Hassan** (UQ Gatton) who will act as the Director of Biopesticide Division of BioScience Australia. An official contract was signed in December, which established BioScience Australia at the University of Queensland. The program, which is focused on natural plant biopesticides for use in crop and animal production and protection, will be based at both UQ Gatton and UQ St Lucia campuses. The research will promote natural plant products for use such uses as biopesticides and osmo-regulators. Venture capital company BioScience Australia will provide $5 million to each campus. **Farid Talukder** will join Errol's team. He completed his Ph.D. and postdoctoral research in the field of botanical pesticide and has vast experiences in extraction, isolation & identification of bioactive plant compounds (through HPLC and GC-MS) and their bioassays on insect pests. Biopesticide Division expects to employ a number of new staff and up to 9 postgraduate students at the UQ Gatton Campus to meet the needs of this project. This is a major new initiative for the School, promising both intellectual and financial rewards. A number of technical staff will provide support for the program. Further information regarding the Biopesticide Division of the BioScience Australia can be obtained from Dr. Errol Hassan, School of Agriculture and Horticulture, UQ Gatton Campus, Queensland 4345, phone: (07) 5460 1285, Fax: (07) 5460 1283, email: e.hassan@mailbox.uq.edu.au

Rod Elder is continuing his entomological interests. Rod is currently working on a locust and a leucaena psyllid paper, and has a papaya agronomy paper and a papaya phytoplasma paper with referees.

Frank Page (DPI Applethorpe) advises that western flower thrips were present in very large numbers during December. The thrips were breeding on flowering white clover which is the predominant species of ground cover in apple orchards. No damage to stone fruit

during ripening was noticed. Samples of thrips were sent to **Grant Herron** at the Mac Arthur Institute, NSW Agriculture, to determine levels of resistance to insecticides.

Brad SCHOLZ
Regional Councillor

SOUTH AUSTRALIA

Adelaide University
Dept. Applied & Molecular Ecology

The European Wasp Workshop held in Hobart 4-5 December was attended by 16 people from NZ, Tas, SA and Vic., including **Andy Austin**, **Marta Kasper** and **Andy Reeson** from Adelaide University and **Glenys Wood** from SARDI.

Elise Head, Marta Kasper, **Claire Stephens** (PhD students), **Tim McCullough** (Hons.) and **Andy Reeson** (Post-doctoral Fellow) presented posters at the Ecological Society Conference in Melbourne.

Tim McCullough recently completed his Honours in the Department of Applied and Molecular Ecology. His thesis, entitled "Ecology of the obligate burrowing spiders associated with the Adelaide pygmy bluetongue lizard (*Tiliqua adelaidensis*)", was supervised by **Andy Austin**, and **Mark Hutchinson** of the South Australian Museum. There are four main outcomes. Seven species of large burrowing spiders were recorded and identified from the Burra study area. Lizards were found to utilise lycosid burrows in much higher numbers than first thought. Spider populations reach a peak in mid winter corresponding to an increase in burrow numbers, before reaching a plateau in late spring and then decreasing in summer. Lycosids were found to move between burrows, and may occupy more than one burrow during their life.

John Jennings has been visiting **Mike Fitton, Ian Gauld**, and others at the Natural History Museum, London, **Donald Quicke** at Imperial College, Silwood Park, **Chris O'Toole** at Oxford University and **Mark Jervis** at Cardiff University. John has been discussing aspects of the systematics and biology of aulacids (Hymenoptera: Aulacidae), and possible collaborative projects.

John Jennings was recently elected to the position of Treasurer of The Royal Society of South Australia (a glutton for punishment!).

South Australian Museum

Brian Heterick, the authority on *Monomorium* ants, drove over from Curtin University and spent four days with **Archie McArthur**. They talked about ant taxonomy and Brian identified the collection of *Monomorium* in the South Australian Museum. Together they collected 14 species of ants from trees in the North Adelaide Park lands, and Brian was surprised to see so many of the trees dominated by exotic Argentine ants.

Finally, but by no means least, on behalf of all members of the Society, I would like to wish **Peter** and **Jill Allen** all the best in their retirement.

John JENNINGS
Regional Councillor
(In a cold and wet London)

TASMANIA

University of Tasmania
School of Ag. Science/CRC for Sustainable Production Forestry

An eventful few months has passed recently. Firstly, **Marina Hurley** decided at the end of her 3 year contract to not apply for a further appointment and left Tasmania to explore new options/careers in Victoria. However, she still maintains several links with the school/CRC with respect to ongoing research projects. Interviews were held for a postdoctoral research fellow in forest insect ecology in very late December, and we are keen to get the new appointment on board ASAP! **Geoff Allen**, was re-appointed (and also tenured) as lecturer in entomology in the school- though his complimentary? graduate students said he needed to grow a fatter arse now to be credible! Congratulations also to a swag of students in the month of December. **Bradley Howlett** received his PhD and **Tara Simmul's** PhD was passed by the examiners. **Jamie Davies** was awarded first class Honours for his thesis on eriophyoid mites on blackberries and accepted an APA scholarship to commence his PhD with **John Ireson** and **Geoff Allen** on the biocontrol of gorse. He is currently working on a summer project with John on the release and establishment of boneseed leafroller moth as a biocontrol for boneseed. **Mick Lang** completed an excellent honours study on the spatial and temporal pattern of blowflies in Tasmania and their use of possum carrion as a breeding resource. He admirably dealt with an impressive number of odours and flies and is now working over summer as a research assistant for **Jane Elek** in Forestry Tasmania. Finally, **Helen Nahrung** was awarded a Maxwell Ralph Jacobs grant to undertake a trip to the mainland to collect populations of *Chrysophtharta agricola* for her genetic studies.

On the research front all report a warm season with early insect activity and rapid generation times in the field. **Anthony Rice** visited ANIC Canberra and **Don Colless** prior to the start of the field season to sort out the identification of tachinid parasitoids of Tasmanian leaf beetles and is now busy with

numerous parasitoids and beetles in the lab and field. **Luke Rapley** has been travelling north to examine Autumn gum moth outbreaks and **Hilton Regdrove** has also been northward bound to look at *Heteronyx* beetles. **Brendan Murphy** (Uni. Canterbury, NZ) has returned to Tasmania for another field season on egg parasitoids of leaf beetles and reports he has made field releases of Tasmanian *Enoggera* in New Zealand in October. **Neil Gilbert** (University of Cambridge, UK) is also on a return visit to Tasmania and is busy rearing Hobart populations of *Pieris rapae* as part of a comparative study of insect developmental rates.

There have been two national workshops held recently in Tasmania. The Forest Health Research Working Group 7, a group of Australian and New Zealand forest entomologists and pathologists, met in Geeveston over three days. The second national workshop on European Wasp research was held in the School of Geography and Environmental Studies at the University of Tasmania and was chaired by **Andy Austin**. Finally to polish off the end of year and to round off the duties of an AES regional councillor a well attended Christmas lunch was organized and held at a local pub, hopefully to begin a long tradition!

Forestry Tasmania (FT)

Dick Bashford attended National Sirex Workshop at Tumut from the 4-5th October and the NSCC Sirex meetings in Melbourne from October 31st to the 1st November. He also took part in the National European Wasp Workshop meeting in Hobart on the 4th December and subsequently took delegates on a field day to Warra to see the invertebrate SST trial. **Glenys Wood** and **Andy Reeson** stayed on for the week to help set up a wasp baiting trial for *V.vulgaris* and *V. germanica*. Altitudinal transects are being set up at Mt Weld (Warra) from 100 to 1200 metres and sampling for invertebrates commences early January. **Niall Doren** was appointed to collect and sort the samples to family level during the summer. Asian Gypsy Moth monitoring has also commenced with 200 traps set at 5 port areas around the state.

North Forest Products (NFP)

NFP has established a range of field trials to test the efficicacy of Imidacloprid against *Heteronyx* spp. (Scarabaeidae:Melolonthinae) which attack young *Eucalyptus nitens* seedlings when planted in some regions of Tasmania. NFP has introduced a new insect monitoring system this season to be carried out across its estate of 50,000 ha of eucalypt plantations in Tasmania. The system is linked to a GIS package and produces weekly maps of insect caused defoliation intensity and population sizes of the 23 most significant insect pests. This information is then used to decide on the need for insecticide application.

Department of Primary Industries, Water and Environment (DPIWE)

DPIWE interviewed for a second entomologist in January. **Lionel Hill** and DPIWE agronomist **Felicty Wardlaw** continue with their first year's collaboration in the second HRDC diamondback moth project. They are giving great emphasis to working with private sector brassica agronomists in the field to better understand opportunities to influence pest control decisions. They are also closely monitoring pest and parasitoid levels in one sequential commercial crop and an unsprayed experimental crop. **Odette Suitor**, an applied science graduate from University of Tasmania, was appointed in January to assist in this work part time until April. Lionel gave wingless grasshopper a lot of coverage in the local rural media in anticipation of a third successive bad season. This appears to have paid off with many growers forwarned to assess hatching of juveniles at egg-beds in November and able to take timely action. Lionel detected low numbers of immigrant noctuid pests such as southern armyworm, native budworm and two cutworm species in spring light-trapping and so issued no pest alerts. Summer experience confirmed this action. A regular flow of reports to industry agronomists by means of group faxing on above average diamondback moth flights have assisted industry in controlling this pest.

Geoff ALLEN
Regional Councillor

VICTORIA

Agriculture Victoria - Tatura

Malcolm Campbell has been away from AV Tatura for the last three months controlling locusts in Northern Victoria. While he was away **David Williams** assumed the role of Institute director.

This week we had a visit from **David James**, who was over from the USA on a brief visit. It was a good chance for the Entomology team to discuss *Carpophilus* research and other IPM issues. **Mofakhar Hossain** is currently plotting the best plan of attack for the peach harvest when a large scale *Carpophilus* damage assessment will be undertaken throughout the Goulburn Valley. The entomology group has been inundated with enquiries about the ground shield bug which has been swarming in the district.

Christmas Party time in Tasmania
(only the best beers sold down there!)

Museum Victoria
The Museum team of **Alan Yen**, **Simon Hinkley** and **Peter Lillywhite**, were part of a partnership with the Department of Natural Resources and Environment (DNRE), Deakin University, Monash University and La Trobe University that received the DNRE *David Ashton Biodiversity Award*. The award celebrates innovative achievements in science and was awarded for the team's work in Box Ironbark forests.
Melbourne Museum had a successful public opening of Stage 1 on 21 October 2000. The first of the natural history displays appeared with the opening of Stage 2 on 9 December 2000. This included the Forest Gallery, a living outdoor exhibition on the Mountain Ash forests to the east of Melbourne, and the Children's Museum. Entomology was prominent in both of these exhibitions. The Stage 3 opening on 14 January of the Science and Life Gallery featured entomology in two of the three exhibitions.

Institute for Horticultural Development, Knoxfield
Peter Ridland and **Nancy Endersby** have become immersed in the preparations for the 4th International Workshop on Management of Diamondback Moth and Other Crucifer Pests to be held in Melbourne in November 2001. **Peter Ridland** attended the Joint Annual Meeting of the Entomological Society of America, the Entomological Society of Canada and the Societé d'entomologie du Québec in Montréal in early December. En route to Montréal he visited **Merle Shepard** (Clemson University) in Charleston, South Carolina, for discussions on *Liriomyza huidobrensis*. After the conference, he caught up with **Len Coop**, Oregon State University, in Corvallis for consultation about web-based implementation of insect phenology models.
Violeta Traicevski together with **Ross Mann**, and **Jo Luck** are working on a project trying to establish whether Pierce's disease (PD) can establish in Australia. The project is concentrating on whether known PD vectors from the US can establish here and whether there are any possible native Australian vectors that can transmit PD.
The Victorian Agricultural Insect Collection team (**Mali Malipatil**, **Kyla Finlay**, **Linda Semeraro** and **Fran Richardson**), have now completed databasing all pest specimens in the collection occurring on stone fruit. This work is part of the Science and Technology Initiative project aimed at improving Market Access within Victoria and Australia. The databased records of stone fruit pests and diseases will soon be available (with some limited access) via a web site that also provides species information pages, distribution maps and images. This year, the project will concentrate on incorporating pome fruit pests into the database and web pages.

Sunraysia Horticultural Centre
LeAnn Beanland was a judge for the student poster competition and presented "In search of the insect vector of the Australian grapevine yellows phytoplasma" at the 2000 Joint Annual Meeting of the Entomological Societies of Canada and American held in Montreal , Canada in December. Her search for the insect vector of the Australian Grapevine Yellows phytoplasma continues. **Marlo Rankin**, a DNRE cadet who is a double major student of commerce and agriculture, is working on a small project in Dr. Beanland's lab at SHC. Marlo is evaluating landscape characteristics around Chardonnay vineyards that may influence the incidence and abundance of potential insect vectors of the AGY phytoplasma within the vineyards. The vegetation communities she is comparing that may influence the vineyards insect fauna are: 1) native scrub 2) Chardonnay vineyards surrounding by more vines and 3) row crops such as wheat and oats. Trapping will commence on 18 January.

The Australian Plague Locust Control Program-NRE
The Australian Plague Locust Control Program in Victoria involved entomologists **Malcolm Campbell** as Incident Controller and **Peter Williams** as Planning Officer. Properties at Ned's Corner (about 80 km west of Mildura), Murrayville and Telopea Downs were the main target areas. Aerial placement and drift spraying with fenitrothion provided good control of nymphs and adults preventing damage to cereal and lucerne crops and pasture and formation of swarms of adults which could have attacked horticultural crops, mainly vegetables and vines. A swarm did take off from Ned's Corner and an alert went out for the "lost locusts" which according to wind trajectories should have ended up in Murrayville or further south. We believe they took off later than anticipated and a wind shift carried them into a National Park in South Australia.

IPM Technologies
All at IPM technologies have been (and are still) extremely busy with helping farmers in an ever increasing number of crops develop and implement IPM. **Paul Horne** and **Cindy Edward** have had good results in developing practical methods to help farmer use IPM to control all the pests in vegetable crops such as celery, lettuce and brassicas, and

are well on the way to working out tailored IPM programmes and proving them to farmers with glasshouse tomato and flower crops. **Martina Bernard** is helping Paul develop and demonstrate an IPM programme for tablegrapes in Robinvale, as part of a project supported by HRDC. They have had successes there with insecticide use being reduced massively on some farms. **Neil Hives** is working hard helping growers around Ballarat, including a farmer producing organic strawberries and brassicas, to keep insecticide use to a minimum.

Cathy MANSFIELD
Ross FIELD
Regional Councillors

Entomological Society of Victoria

The Society usually arranges an excursion to a local collection of entomological interest rather than inviting a speaker for its October meeting. This year members watched the film *Microcosmos* with its incredible close-up photography. The year closed with a members night at which **Daniel Dobrosak** demonstrated that he has finally conquered his three rings and two flash head system to produce an excellent series of slides of other insects found on paropsid-loving wattles. **Ray MacMahon**, student of viticulture, ended the serious conversations by a ritual drawing of corks.

A "visit behind the scenes" to the butterfly house at Melbourne Zoo was hosted by keeper **Patrick Honan** who explained the processes and the problems. The butterfly house is to be closed to the public for six months while it is incorporated into an extension of the Asian rainforest exhibit

Recent issues of the newsletter have contained life history notes on butterflies, a Tiger Beetle range extension, W.J. Macleay's involvement in the formation of the Entomological Society of NSW and the Linnean Society of NSW, and the text of the presidential address on insects in science fiction. As a service to members we also publish the table of contents of each issue of the *Australian Journal of Entomology*.

Ian ENDERSBY

WESTERN AUSTRALIA

Agriculture Western Australia/CLIMA

Rob Emery attended the National Plant Pest and Disease Collection Database meeting hosted by Agriculture Victoria in Knoxfield. The meeting was organised to develop a framework for a national, virtual database to link reference collections of pest and diseases of economically important crops and commodities in Australia.

Rob also attended the Controlled Atmosphere and Fumigation Conference in Fresno, California in November, and while in California he took the opportunity to tour the new USDA Horticultural Pests Research Laboratory as well as some of the farms and grain storage facilities. The San Juaquin Valley grows over 25 different crops and Rob is still confused at having seen cotton, walnuts, lucerne, sugar beet and irrigated wheat grown in adjoining paddocks. Insect pests made Rob's visit worthwhile with fire ants, olive fruit fly, glassy winged sharpshooters all invading the county during the week he was there. One of the more interesting bulk storage facilities visited by Rob included the Corcoran Prison where Charles Manson is currently and optimistically hoping for outloading.

During December **Natarsha Zilm** and Rob hosted **Kathryn Sparks** from AQIS who spent a week looking at the AGWEST reference collection database.

Curtin University of Technology

Prof **Norivaldo dos Anjos**, Federal University of Vicosa, Brazil, has just arrived on a one-year visiting fellowship. Norivaldo has many years of experience with Brazilian eucalypt plantations and intends to work on chrysomelids of Tasmanian Bluegum plantations. **Dr Mark Moffett**, University of California - Berkeley spent four days with **Jonathan Majer** discussing both ant and tree canopy biology. Mark also spent time photographing myrmecochorous ants 'in action' for a popular article that he is preparing. Dr **Hyean Cheal Park** and his Director (=Vice Chancellor), of Miryang National University, visited Curtin to develop initiatives under their recently signed 'Memorandum of Understanding' with Curtin. Their first entomology MSc student will be arriving in February and will be working on carabid diversity in urban areas.

CSIRO Entomology

While visiting family in Montreal, **Owain Edwards** attended the joint annual meetings of the Entomological Society of America and Canada (3-7 December). Owain used this meeting to become more aware of current research trends in North America, and also to establish new contacts for potential future collaborations. Owain also visited **Keith Hopper** at the USDA Beneficial Insects Introduction Research Laboratory in Newark, DE and presented a seminar at the University of Delaware. In January, **James Ridsdill-Smith** assumed his new position as Program Leader of the Pests program in CSIRO Entomology.

University of Western Australia

Helen Spafford Jacob has recently been appointed to the new Biological Control of Weeds position in Science and Agriculture at UWA, and will arrive at the end of January. Congratulations also to **Ian Dadour** for his recent appointment as senior lecturer in Forensic Science at UWA, specialising of course in forensic entomology.

Expected entomological visitors to UWA Zoology in 2001 include Prof **John Alcock** (Arizona State University) from June - December studying burrowing bees, Prof **Marlene Zuk** (University of California - Davis) in August to study crickets, Prof **Darryl Gwynne** (University of Toronto) in August/ September to study katydids, and Prof **Henry Bennet Clark** (Oxford University) from September to December to study insect bioacoustics.

Owain EDWARDS
Regional Councillor

BOOK REVIEWS

Australian Insects. A Natural History

By Bert Brunet
New Holland Publishers Pty Ltd
288pp. 265 colour photographs. $59.95

It is always good to see another book on insects for the general reader. This is particularly true when the book is as well illustrated as this one. True, the line drawings are inelegant, sometimes to the point of crudity. But the colour photographs are splendid, frequently to the point of real beauty. Many of these pictures are not just well framed, in sharp focus, brilliantly coloured and highly attractive, they are also often biologically informative. What more could a discerning reader hope for in a book about insects, particularly at this excellent price? Well, to start with, a reliable text. And there we have some problems. Far from the "authoritative text" promised on the inside cover, we are offered a rather confusing mixture of information that appears, at times, to have been pulled together a little hastily. For example, "..with the forewings being slightly wider and narrower than the hindwings." (p. 100) is a little difficult to visualise. Similarly, if the abdomen truly was "..with segments 1 – 8 having two pairs of spiracles" (p.46), the total of 32 spiracles would make thrips a very remarkable group. The book has clearly been through the loving hands of a 'designer' - as evidenced by the division of each page into 2.5 columns. The precious conflation of running heads with page numbers, in small pale font, is also irritating in use. But it is the structure of the book that, for my taste, is its major weakness. It is divided into two halves. Part One has six chapters, the first five dealing with body structure, life cycles, flight, behaviour, and habitats. But each of these general chapters includes its own individual section "Diversity Among The Groups" that discusses the same subject Order-by-Order. Part Two of the book then deals with each of the insect Orders in turn. Thus, for each Order, the reader must expect to look in six separate places. However, insects are a vast canvas. To capture their diversity and fascinating biologies is something that most of us lack the courage to attempt. Despite the carping, it is better to have tried, and not quite succeeded, than never to have tried at all. So find someone to buy this book for. We need more people in the community who are prepared to look at an insect, to see its beauty, to marvel at its behaviour, and to consider its place in the world. As Tom Eisner pointed out, this planet is theirs, we need to come to terms with our landlords.

LAM

Native Bees of the Sydney Region – A Field Guide

By Anne Dollin, Michael Batley, Martyn Robinson and Brian Faulkner

Published and distributed by the Australian Native Bee Research Centre, PO Box 74–M, North Richmond NSW 2754. $15.00 plus $2.50 postage and handling (no GST payable).

This is the first field guide to Australian native bees ever produced for a lay audience. It describes 31 of the most easily-recognised native bee species found in Sydney, over 20 of which are also found in Queensland and Victoria. Published in 2000, this practical paperback has 72 pages of text and black and white illustrations, and eight pages of colour plates. For each species the guide presents a common name, a description and colour photograph, a review of nesting habits, and a list of similar local species. Introductory chapters cover designs for artificial nests and a review of garden plants suited to native bees. A pronunciation guide, glossary and field observation sheets are included. The book also features a foreword by environmentalist Eric Rolls.

This book has been warmly received by many in the naturalist, gardening, beekeeper and education fields, and we hope it will promote public awareness of Australia's little-known but valuable native bee species.

Anne DOLLIN
Australian Native Bee Research Centre
http://www.zeta.org.au/~anbrc/

NOTICES

4th Asia Pacific Conference of Entomology

14-17 August 2001, Renaissance Hotel, Kuala Lumpur, Malaysia
Please visit website: http://www.mapps.org.my/mapps/APCE.html
For On-line registration form please visit:
http://202.185.54.145/conf/apce.html
Conference Secretary: Assoc. Prof. Dr. Idris Abd. Ghani (idrisgh@pkrisc.cc.ukm.my)

PhD Scholarship, Griffith University

An APAI scholarship in Behavioural Physiology/ Ecology of Fruit Flies is being offered with the Tropical Fruit Fly Research Group to a student who has completed an honours degree in entomology or invertebrate zoology. The scholarship is funded through an ARC SPIRT grant with Aventis Crop Science for research in understanding protein bait-spray technology for the control of fruit flies.
Fruit flies are the most serious pests of horticulture in the Australasian region, costing the Australian horticulture industry an estimated $50 million per year. The use of insecticides mixed with food lures is an environmentally sensitive and commercially viable alternative to orchard cover-sprays, but we have only minimal knowledge of why this approach works, or what might be done to make it better. This scholarship will focus on the science underpinning protein bait sprays for fruit fly control, with particular emphasis on the behaviour and physiology of fruit fly feeding and foraging. Laboratory work will be undertaken within the Tropical Fruit Fly Research Group of the Australian School of Environmental Studies, Griffith University Nathan Campus. Fieldwork will be undertaken in South-east Queensland.
Enquiries should be directed to Dr Tony Clarke, Australian School of Environmental Studies, Griffith University Nathan Campus, Qld 4111. (Phone 07 3875 6723, e-mail
t.Clarke@mailbox.qu.edu.au).

Technical Training Course ANIC, Canberra

Staff of the Australian National Insect Collection provide a training course for entomological technicians working with research collections of insects and related organisms for taxonomic study and identification. This course is designed to teach participants how to collect, prepare and curate entomological material to a stage ready for identification. The course comprises a series of demonstrations on these aspects as they relate to the major orders of insects and related arthropods. Specimen identification is not covered in the course. All demonstrations are conducted by ANIC staff expert in the area of concern. The next course will be held 23 - 27 September 2002, at the CSIRO Entomology Black Mountain Laboratories, Clunies Ross St, Acton, ACT 2601.
For more information contact Graham Crompton, ANIC Manager
Phone: (02) 6246 4036
Fax: (02) 6246 4264
Email: graham.crompton@ento.csiro.au
http://www.ento.csiro.au/products/products.html#training

International Conference on Orthopteroid Insects

The Orthopterists' Society, international scientific association for the study of Orthopteroid insects, presents an International Conference in Montpellier, France, from August 19 to 22, 2001.
This conference will take place in Le Corum Montpellier Congress Centre. The local organization is entrusted to Prifas, operational acridology laboratory of the Center of international cooperation in agricultural research for development (CIRAD). This international conference will address some of the main concerns in current Orthopteroid insect research in the field of pest management, ecology, systematics and behaviour. It will comprise 2 symposia with special format (Pest management and Systematic), 1 regular symposium (Ecology) , 1 student symposium (Behaviour), 1 session with the usual short oral presentations. Most communications will have to be presented as posters. Simultaneous translators (French to English and English to French) will cover all formal sessions. Full information (conference format, schedule, registration, accommodation, oral presentations and posters deadline) are available on our web site (regularly updated): http://os2001.cirad.fr

Thrips, Plants, Tospoviruses: the Millenial Review

Reggio Calabria, Italy, 2-7 July 2001

The intention of this Symposium is to bring together the wide range of people interested in the biology of thrips and tospoviruses, to discuss the inter-relationships of these organisms and the impact that they have on crop production. Subjects to be reviewed include: thrips biology, structure, development and ecology; tospovirus structure, epidemiology and host-plant relationships; and the evolution of the thrips/virus relationship.

Websites: http://www.biologie.uni-halle.de/org/thripsnet/news.html

http://www.keele.ac.uk/depts/aep/thrips2001

Organising Secretary: Prof Rita MARULLO: rmarullo@unicirc.it *or* marullo@uniserv.uniplan.it

Programme Chairman: Laurence Mound: laurence@ento.csiro.au

Management of Diamondback Moth and other Crucifer Pests.

4th International Workshop 26-29 Nov. 2001

The fourth international DBM workshop will continue the tradition of the first two workshops held in Taiwan and the third one held in Malayasia, of bringing together scientists and others involved with the *Brassica* industry from around the world. Themes of the workshop will focus on revision of progress made in *Brassica* Integrated Pest Management in the past two decades since the first workshop and will aim to identify the major impediments to its further progress. Emphasis will be placed on innovations in pest management techniques.

http://www.studentadmin.unimelb.edu.au/moth/

Email: fionacam@unimelb.edu.au.

A.E.S. PHIL CARNE PRIZE

The Executive takes pleasure in announcing The Australian Entomological Society's Phil Carne Prize. This prize honours contributions made by Dr Phil Carne to the science of entomology and to The Australian Entomological Society, and is intended to foster high-quality entomological research among young scientists

The prize is open to any undergraduate or postgraduate who has submitted a paper to the **Australian Journal of Entomology** and had it accepted for publication within the last year. Entrants may be enrolled full or part-time, and are not required to be members of The Australian Entomological Society. Entries will be reviewed by the normal Journal referring process. The Chief Editor will advise the Executive of the eligible papers and these will be presented to a selection committee appointed and convened by the Vice-President of the Society.

The winner will be invited to present the winning paper at the Society's Annual General Meeting and Scientific Conference. The prize will be $300 plus free conference registration, accommodation, return airfare to the Annual Conference and presentation of a scroll.

Manuscripts and other editorial correspondence should be addressed to Dr Peter Allsopp, Chief Editor, Bureau of Sugar Experiment Stations, Private Bag 4, Bundaberg DC 4670, Australia.

MACKERRAS MEDAL

Do you know an entomologist who deserves special praise?

The **Mackerras Medal** is the Australian Entomological Society's award for excellence and can be awarded every two years to a financial member of the Society who is: under 50 years of age, pursuing excellent research, and has outstanding personal qualities.

Any financial member, including students, may make a nomination to the Secretary. The nominations should be received at least 3 months before the AGM and must include: Candidate's name and date of birth, academic distinctions, appointments and society memberships, list of publications, and 500 words explaining why the award should be made.

THE AUSTRALIAN ENTOMOLOGICAL SOCIETY INC.
NOMINATION FOR MEMBERSHIP

Please return to: Ms Nancy Endersby, AES Secretary, c/o Institute for Horticultural Development, Private Bag 15, Scoresby Business Centre VIC 3176 AUSTRALIA

We, the undersigned

Proposer .....
(print name) (signature)

Seconder .....
(print name) (signature)
being financial members of the Society, propose the following for membership of the Australian Entomological Society Inc.

Title.....Initials.....Given name.....Family name.....

of (Address) .....

.....Post Code.....

Tel. .....Fax .....

E-mail ..... Degrees, etc. .....

Interests, experience and publications in entomology for publication in the News Bulletin *Myrmecia* (please attach brief resumé) .....

I accept nomination and undertake, if elected, to abide by the rules of the Society and to pay annual subscriptions by the date prescribed.

Signature ..... **Date** .....

For **2001**: Annual subscription $65; full-time student or retired members $32.50
New members receive a first year rebate of $5.00 (pay $60) and students $2.50 (pay $30).
Students please attach proof of full-time student status
Payment in Australian dollars is required with nomination and may be made by MONEY ORDER, CHEQUE (made payable to Australian Entomological Society Inc.) or CREDIT CARD

Bankcard Visa Mastercard
Number _ _ _ _ _ _ _ _ _ _ _ _ Expiry date _ _/_ _

Signature _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ I require a receipt YES/ NO

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